Abstract of the Disclosure

A system and method for optimizing a series of traces to be executed by a processing core is disclosed. The lines of a trace are sent to an optimizer each time they are sent to a processing core to be executed. Runtime information may be collected on a line of a trace each time that trace is executed by a processing core. The runtime information may be used by the optimizer to better optimize the microoperations of the lines of the trace. The optimizer optimizes a trace each time the trace is executed to improve the efficiency of future iterations of the trace. Most of the optimizations result in a reduction of the number of μ ops within the trace. The optimizer may optimize two or more lines at a time in order to find more opportunities to remove μ ops and shorten the trace. The two lines may be alternately offset so that each line has the maximum allowed number of micro-operations.